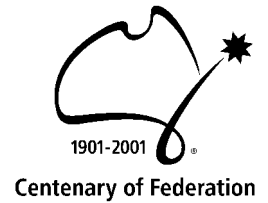


Questacon

Miniature Stitches



An Australian surgeon pioneers microscopic surgery techniques.

WHAT'S THE PROBLEM?

Many of us take our hands and fingers for granted, but for those people who are missing them, life can be a challenge. Replacing body parts that have been lost through an accident or from a birth deformity isn't as simple as just attaching a new one. Our bodies are made up of many minuscule parts, and the successful transplantation of something as complex as a hand requires the joining of thousands of tiny nerves, capillaries, veins and arteries.

A GREAT AUSSIE SOLUTION

Professor Earl Owen graduated as a surgeon from Sydney University and moved to London with a burning desire to help babies born with deformities. Whilst trying to operate on a tiny newborn, he realised that the surgery could be so much more precise if he could use a microscope whilst working. He took his ideas and designs to the microscope makers Zeiss, and together they developed a range of equipment that made surgery possible on a tiny scale. Microsurgery was born.



Professor Owen has since pioneered microsurgical techniques by being the first to rejoin an amputated index finger in 1970, successfully reversing thousands of birth control operations, repairing nerve damage, and recently heading the team that performed the world's first hand transplant.

Professor Earl Owen: pioneer of microsurgery
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HOW DOES IT WORK?

It was the development of the surgical equipment and advances in pharmaceutical research that made this type of work possible. Professor Owen designed the operating microscope and microinstruments (many of which are manufactured in Australia), then developed the precision techniques necessary to stitch tiny pieces of living tissue together.



The first patient to receive a hand transplant –
6 months after the operation

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For surgery involving the transplantation of living tissue from one person to another, Professor Owen and his team use a cocktail of immunosuppressant drugs to prevent rejection of the transplant and to encourage nerve growth.

THE FUTURE

Whilst amazing things have already been done using the microsurgical techniques developed by Professor Owen, he sees the future as being just as exciting. He would like to move into transplanting entire limbs, not just the lower segments. Rather than using tissue donated from deceased people, he thinks that soon we will be able to clone body parts, thus reducing the possibility of rejection. Finally, he wants to develop a form of stitchless surgery, using lasers instead of needles.

To find out more information about Professor Owen and microsurgery techniques, look up Professor Earl Owen's web site: <http://www.earlowen.com.au>

FURTHER INFO, FACTS & FUN

- Microsurgical techniques are very important when conducting surgery on eyes or the brain, as well as transplanting organs such as hearts or livers.
- The first man to have a hand transplant was from New Zealand. After having the surgery in 1998, he has now gained almost full feeling in his new hand.
- Surgeons have now completed four double hand transplants on people who were born without hands or lost both in an accident.
- Professor Owen still practises in Sydney, and has headed the International College of Surgeons, and is the Medical Director of the Microsearch Foundation of Australia.
- Professor Owen doesn't limit his talents to surgery, he has also designed auditorium seats in the Sydney Opera House.
- Read an interview with Earl Owen at <http://www.newscientist.com/nl/0930/with.html>

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